

June 3, 1998

The Honorable Elizabeth A. Moler
Deputy Secretary of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-1000

Dear Ms. Moler:

The staff of the Defense Nuclear Facilities Safety Board (Board) recently completed a review of the use of the Work Smart Standards (WSS) process at Los Alamos National Laboratory (LANL) to identify safety-related requirements that will form the basis for its Integrated Safety Management (ISM) program. A report presenting the staff's observations is enclosed for your information and use.

As discussed in the enclosed report, the WSS process at LANL is now apparently being pursued appropriately within the context of ISM. While the initial WSS set had some flaws, the local Department of Energy (DOE) representatives and the laboratory have recognized this and have institutionalized a continuous improvement process that shows promise.

However, LANL's initial efforts to produce their WSS set were marked by some of the problems observed elsewhere in the complex. Most notably, the laboratory at the start interpreted the guidance in DOE Manual 450.3-1, *DOE Closure Process for Necessary and Sufficient Sets of Standards*, as allowing it to pursue the development of its WSS set without considering the DOE directives as an initial base of reference. This approach was abandoned only after considerable effort had been expended, and the later product reflects capture of the important contents of DOE's directives system.

As noted in the Board's recent letter of April 28, 1998, it appears that the existing DOE guidance on the WSS process needs to be updated, expanded, and brought into consonance with the principles and functions that are key to ISM development for the defense nuclear complex.

The Board looks forward to discussing this topic, among others, at the public meeting scheduled for June 24, 1998. Should you have any questions, please contact me.

Sincerely,

John T. Conway
Chairman

c: Dr. Victor H. Reis
Mr. Peter N. Brush
Mr. Mark B. Whitaker, Jr.
Mr. Richard C. Crowe
Mr. Bruce G. Twining
Dr. John C. Browne

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

DNFSB Staff Issue Report

June 3, 1998

MEMORANDUM FOR: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: R. Barton

SUBJECT: Work Smart Standards as an Input to Integrated Safety Management System Development at Los Alamos National Laboratory

This report documents an issue reviewed by the staff of the Defense Nuclear Facilities Safety Board (Board) at the Los Alamos National Laboratory (LANL) on May 13–14, 1998. Staff members R. Barton, A. Jordan, M. Moury, and J. Preston participated in the review.

LANL's Implementation of the Work Smart Standards (WSS) Process

The Board's staff conducted a final, on-site review of how LANL executed the Work Smart Standards (WSS) process as an input to their Integrated Safety Management (ISM) system. It appears that LANL, after some initial problems, executed the process in consonance with the guidance in Department of Energy (DOE) Manual 450.3-1, *DOE Closure Process for Necessary and Sufficient Sets of Standards*. The execution of the WSS process by LANL has some notable attributes, including the following:

- **The WSS selection was made within the context of ISM.** Initially, LANL interpreted the guidance in M 450.3-1 as allowing them to develop their WSS set from whole cloth, without considering the DOE directives as an initial base of reference. This approach was recognized as flawed after considerable effort had been expended, and the requirements selection effort was then redirected. As a result, LANL did not leave "management standards" out of the WSS process. The resulting WSS set included many of the 5480 Series of nuclear facility safety Orders (5480.20, 5480.21, 5480.22, 5480.23, and 5480.25), and a commitment to a locally developed set of "formality of operations" requirements was included as an alternative to a key Order that was omitted (5480.19, *Conduct of Operations*). The decision to omit 5480.19 was reportedly made because of the high level of negative emotions associated with LANL's past attempts to implement this Order. It should be noted that not all of the initial LANL approach was wasted effort—several of the local standards that were developed as part of this effort were judged to be worth keeping.
- **There was active participation by Headquarters and Field DOE personnel.** From

the beginning, DOE personnel who were characterized as “subject matter experts, familiar with DOE directives” were provided to the WSS Focus Groups, the groups at LANL that identified needed requirements and standards. The DOE-Albuquerque (DOE-AL) and Los Alamos Site Office representatives on the LANL WSS Convened Group, which is responsible for managing the overall process, appeared to have played a strong role. For example, they reportedly were instrumental in redirecting the process after it initially went astray. In addition, the LANL Convened Group included a senior DOE Headquarters Office of Defense Programs manager and an individual who had been a key developer of the WSS process from the Office of Environment, Safety, and Health (DOE-EH). The contributions made by these two individuals were characterized as significantly constructive. Finally, the Confirmation Team was also populated with a number of highly experienced DOE personnel, familiar with DOE directives.

- **The WSS process was well documented and subjected to significant quality assurance efforts.** Each selected requirements area has a written pedigree as to the requirements considered and the rationale, justification, and history behind the ultimate selection. The WSS documentation also includes a table that illustrates the disposition of “Orders of Interest to the Board” (reportedly prepared at the insistence of the DOE-EH representative on the Convened Group). Prior to entering the Confirmation Team phase, two internal “murder boards” were conducted on the WSS set by both LANL managers and by DOE-AL. This may have contributed to the fact that the Confirmation Team recommended the addition of only 6–12 additional requirements documents. The Confirmation Team withheld their acceptance of the WSS set until all issues raised during their on-site review had been satisfactorily resolved—more than 2 months later. All issues raised by the Confirmation Team and the resolutions provided were also formally documented.
- **The joint DOE-LANL effort to select appropriate requirements has been institutionalized.** The laboratory and DOE have recognized that the initial WSS set is not adequate; needed additions have already been identified. A “living process” has been established by chartering the existing ISM Change Control Board with the responsibility held previously by the WSS Convened Group to review and disposition modifications to the WSS set in Appendix G of the University of California contract for LANL. The Board’s staff has identified some deficiencies in the WSS set (for example, in the area of seismic design requirements). Both the laboratory and DOE acknowledge that the current WSS set needs to be improved, and in fact have scheduled a meeting of the ISM Control Board to consider the initial upgrades to the set.

Status of ISM Development at LANL

Figure 1 illustrates the status of ISM development at LANL, with the contractual requirements (WSS and List A legal requirements) forming the basis for the ISM. It should be noted that, upon the advice of their Laboratory Counsel, the List A requirements were not included explicitly in Appendix G of the University of California management contract for LANL. Instead, the following statement is included in the LANL WSS as applicable to the laboratory: “Laws and Regulations Enforceable by Regulatory Agency: Requirements of applicable federal, state, and local laws and regulations that address the environment, safety, and health, unless relief has been granted in writing by the appropriate regulatory agency.” Inclusion of List A is *not* required by the DOE Acquisition Regulation ISM Clauses. The decision to leave it out was reportedly made because a blanket statement was believed to be more all-encompassing than any explicit list.

LANL is proceeding with the development of a system of Laboratory Performance Requirements (LPRs—mandatory), Implementation Requirements (LIRs—mandatory), and Implementation Guidance (LIGs) that will implement the WSS and constitute the laboratory’s ISM system. Today, the LPRs, LIRs, and LIGs are in varying states of completion, as shown in Figure 1, but progress toward full implementation (albeit slow) is being consistently made. This focus on top-down implementation of ISM appears likely to result in a robust program across the LANL site. The Board’s staff encouraged DOE and LANL to discuss expeditiously with the Board their rationale for preferring an institutional-level ISM implementation approach, rather than phasing in implementation facility by facility.

It is LANL’s intent that the set of LPRs and LIRs will be formally mandated for use in planning and executing all work at the laboratory, for both research and facility support work. The LIG will be considered “best practices” guidance. Implementation of this concept will take time, however, even after the “paper system” is complete. Significant cultural resistance to the degree of formality of operations this will represent is still reported at the working level. DOE and LANL have committed to a program of special assessments to determine whether necessary significant upgrades to safety management have been achieved. The schedule and approach to be taken for ISM Phase 1 and Phase 2 verification reviews is still being developed. The Board’s staff strongly encouraged the local DOE personnel developing this ISM verification approach to seek the guidance and experience of the Headquarters Safety Management Implementation Team before finalizing their plans. Doing so will help them avoid problems that have been experienced elsewhere in the complex.

Future Staff Actions

The Board’s staff will continue to track WSS upgrades and ISM development and verification efforts at LANL as they progress.

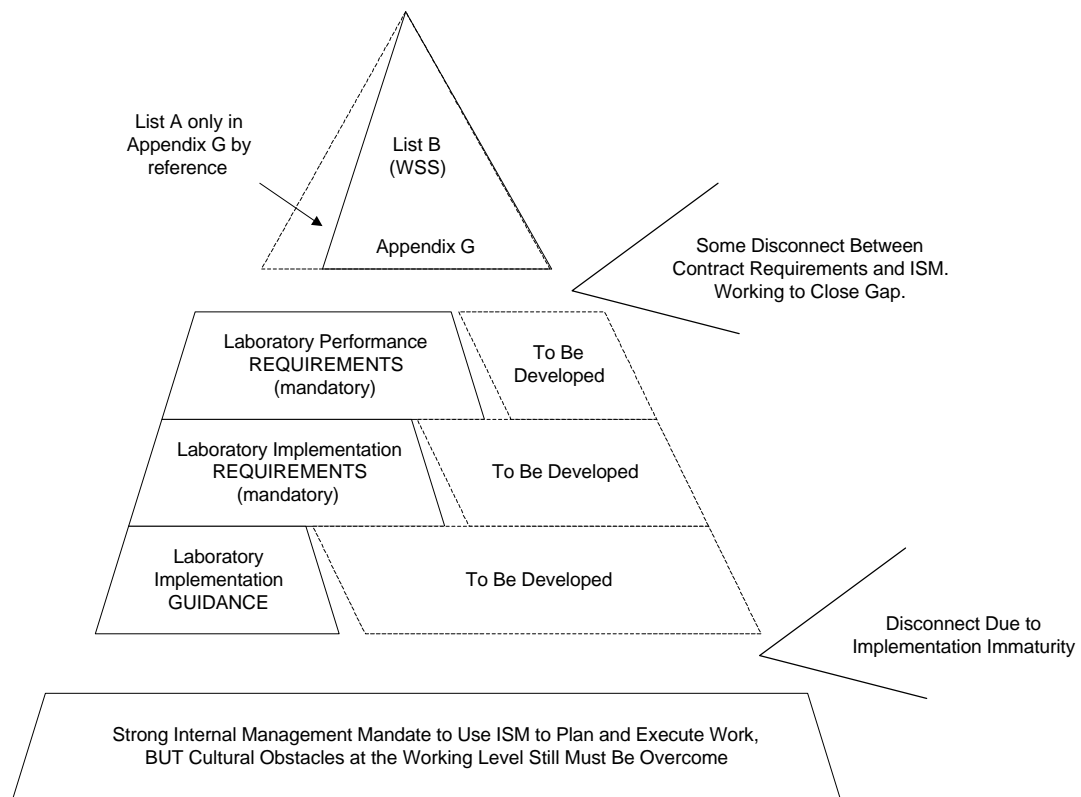


Figure 1. Status of ISM Development at LANL